Title: **Fwd-Rev-Jog using 3 PBs and 2P-SS for 3P Motor** Job: 27

Course: Intro to Automation Unit: Manual Motor Control CLO: 1, 2

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade \_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Student shall develop a further understanding of reversing a motor.
2. Student shall enhance motor jogging design skills.
3. Upon completion, a student shall have a more complete knowledge base for creating proficient motor control circuits.

**Assessment**

Students shall demonstrate a comprehension of the objectives listed above by scoring a minimum of 75% on this Job. Grading shall be based on the Manual Motor Control rubric.

**Devices**

|  |  |  |
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| Inputs | | |
| *Device* | *Description* | *Symbol* |
| Two-position Selector Switch | Mode, Run or Jog | MODE |
| Normally Closed Pushbutton | Stop Motor | STOP |
| Normally Open Pushbutton | Forward Button | FWD |
| Normally Open Pushbutton | Reverse Button | REV |
| Outputs | | |
| *Device* | *Description* | *Symbol* |
| Green Pilot Light | Motor Running Forward | FORWARD |
| Red Pilot Light | Motor Stopped | STOPPED |
| Yellow Pilot Light | Motor Overload | OVERLOAD |
| Blue Pilot Light | Motor Running Reverse | REVERSE |
| 3-phase 24VDC Motor Starter | 3-phase Motor Starter, Forward with 2 NO, 2 NC auxiliary contacts | M3\_F |
| 3-phase 24VDC Motor Contactor | 3-phase Motor Contactor, Reverse with 2 NO, 2 NC auxiliary contacts | M3\_R |
| 208VAC/3P Motor | Three-phase AC Motor | M3 |

**Instructions**

Design a forward/reverse/jog motor control circuit using devices listed above. One pushbutton shall be for forward rotation (CCW). Another pushbutton shall be for reverse rotation (CW). The remaining pushbutton shall be a stop button. The two-position selector switch shall determine whether the forward or reverse action is momentary, a jog, or sealing. If the motor is running in one direction, pressing the opposite direction’s pushbutton shall have no effect. The operator shall have to press the stop button first before making any direction changes. The green light shall indicate forward, the blue light shall indicate reverse, the red light shall indicate stopped and the yellow light shall indicate overload. Once complete, review the design with the instructor. After obtaining approval, wire the circuit. Have the instructor review all wiring before energizing the circuit. Render the schematic using a CAD type software package. Post the schematic to the *student share* folder using filename *MMC Job 27 – name.ext.*

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Discussed design \_\_\_\_\_\_\_\_ Checked wiring \_\_\_\_\_\_\_\_ Energized Test \_\_\_\_\_\_\_\_